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ABSTRACT

Reported are service and research projects which consultants from Vermont's 1970-71 Consulting Teacher Program (Chittenden South) helped teachers to implement to improve the social and academic behaviors of 269 handicapped learners in regular elementary classes. Such program aspects as inservice education, consulting activities, parent involvement, curriculum development, and dissemination are explained. Numerous teacher project reports (comprising most of the document) are included which specify referral problems, classroom procedures, measurement procedures, baseline and contingency data, and results. Referral problems discussed include such difficulties as inability to complete work independently, inattentiveness, inaccuracy and slowness on math problems, and disruptive behavior. An appendix provides a summary table of all service/research projects. (GE)

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INTRODUCTION

During the 1970-71 school year, the Chittenden South Consulting Teacher Program devised and implemented service and research projects to improve the academic and social behaviors of handicapped learners. Special Education Program staff at the University of Vermont served as consultants.

The program staff included a Consulting Teacher, Carol S. Burdett; a Consulting Teacher Intern, Lu S. Christie; a Consulting Teacher-in-training, Harriet D. Klamm; two Data Technicians, Judith C. Pizziconi and Helen S. Coburn. Edward Houlihan, Assistant Superintendent, served as local project director. The district program staff was assisted by Edward M. Hanley, Assistant Professor of Education at the University of Vermont and Research Associate, Special Education Program, and by Martha F. Knight, University of Vermont Consulting Teacher, Special Education Program. These District and University personnel met weekly to review and evaluate the ongoing work of the program.

The Consulting Teacher Program staff provided services to handicapped learners in Charlotte Central School, Hinesburg Central School, Shelburne Village School and Williston Central School.

SERVICE AND RESEARCH

Teachers were assisted in the management and education of 269 children in regular classrooms during the 1970-71 school year. Because of the large number of projects that were carried out, only representative descriptions of some of the types of

service and research activities undertaken in these classrooms will be presented. See Appendix A for a description of all service and research activities.

An additional six children with measured reading deficits were tutored by two aides and one teacher in a pilot reading research project conducted under the direction of Mrs. Burdett.

INSERVICE EDUCATION FOR TEACHERS

Inservice education for district teachers was carried out through a workshop conducted by Mrs. Christie and two graduate level University of Vermont courses conducted by Mrs. Burdett.

Four teachers and one teacher aide participated in the workshop. Ten teachers completed in one graduate course (Education 295), and three teachers and one aide completed two graduate courses (Education 295 and 296).

All workshop and course participants reliably measured, monitored, and beneficially changed academic and social behaviors of handicapped learners within their classrooms through the implementation of new teaching/learning procedures. These procedures were the practical applications of reading in applied behavior analysis which were course and workshop requirements.

A summary of these procedures can be found in Appendix B.

CONSULTEES

Throughout the school year, the services of the program were requested by ten teachers who referred specific handicapped learners in their classrooms. These teachers were assisted

in developing new teaching/learning procedures, measurement techniques, and curriculum materials designed to meet the individual needs of their students. One of these teachers extended these procedures to include all of the children in her classroom.

PARENT INVOLVEMENT

Full and informed consent of parents and/or guardians of all children served was obtained. Letters of permission for children's participation in the program were signed and returned to the school. Numerous parent conferences were held which included the classroom teacher, the Consulting Teacher Program staff member and, occasionally, the child. Home consequation of in-school behaviors was carried out by six parents, and one parent carried out a teaching/learning procedure at home with her child to supplement work being done at school.

CURRICULUM DEVELOPMENT

Individualized curriculum materials in reading, math and handwriting were developed by program staff, and additional commercial materials were made available by the Consulting Teacher Program.

DISSEMINATION

Monthly program reports were made available to the District Administrative staff. Two district-wide informational meetings were held in the fall to inform elementary teachers of the services offered by the program. At these meetings Mrs. Burdett described the procedures for referral of specific handicapped learners,

outlined the in-service courses being offered in the district, and introduced the program staff

In addition, staff members made other presentations both within and outside the district. Mrs. Burdett, Mrs. Christie, Miss Klann, and Mrs. Knight described the program at a faculty meeting in Hinesburg, and Mrs. Burdett also spoke to the Hinesburg Parent Teachers Organization. Mrs. Christie, Miss Klann and Mrs. Knight described measurement procedures used by the program to the Parent/Teacher Organization at the Charlotte Central School. Mrs. Christie and Miss Klann made presentations at the 1970 convention of the Vermont Education Association in Burlington, Vermont, and Mrs. Burdett served as a panel member. At a meeting of the Vermont State Board of Education in October, Mrs. Burdett, Mrs. Knight and Mrs. Christie presented the rationale and goals of the Consulting Teacher Program in Vermont, and described the training program for Consulting Teachers. Miss Klann presented her work in the district to a psychology seminar and to an Education Colloquium, both at the University of Vermont. She also presented her work in Ludlow, Vermont to the local school board, and to the Ludlow faculty.

In April, two district teachers, Miss Judith Duval from Shelburne Village School and Miss Susan Solomon from Williston Central School, presented their classroom procedures at the Second Annual Conference for Behavioral Educators held in Burlington, Vermont. During the course of the school year, program staff members provided for on-site visitations for the following visitors:

Mrs. Elizabeth Anderson, Title I Elementary Reading Teacher, Addison Northwest School District.

Dr. Saul Axelrod, Assitant Professor, Psychology Department, University of Connecticut.

Mrs. Fay H. Charles, Consultant, Special Education Services, Vermont State Department of Education.

C. Drussel Coffin, Assistant Director of the Division of Special Educational and Pupil Personnel Services, Vermont State Department of Education.

Mrs. Marian Crosby, Educational Consultant, Vermont State Department of Education.

Dr. Wayne L. Fox, Associate Professor, Special Education Program, University of Vermont.

Robert Howe, State Advisory Council, Title III Programs.

James Lindalla, Assistant to the Director, Vermont Teacher Corps.

Mrs. Gail Link, Title I Secondary Reading Teacher, Addison-Northwest School District.

Louis Malenfant, Director of Pupil Personnel Services, District D, New Brunswick, Canada.

John Saunders, Director of Public Relations, Vermont Title III Programs.

Dr. Louis Schwartz Professor of Education, Florida State University.

Dr. Josephine Taylor, Project Director, Bureau for Education of the Handicapped, Washington, D.C.

Frank Watson, Instructor, Education Department, University of Vermont.

Alice Bennett - Shelburne Village School

PROCEDURES

Referral problem

Kevin was referred by his teacher because he would lose his place during a teacher directed work time. The teacher had to prompt him continually, either verbally or by pointing with her finger in order to elicit an oral or written response. He would not finish any papers independently.

Pupil

Kevin was an eight-year-old boy who was spending his second year in a level-one learning disabilities classroom. He had attended preschool at the Baird Center for Disorders of Communication.

He received medication to control epilepsy and had a history of severe hearing losses.

Kevin spoke in an inaudible tone and seldom volunteered any verbal responses. He would often get lost in the school, remain on the playground after the other children had come in, or go to the boys room and forget to return.

Instructional objective

During the reading and math group periods, Kevin will not lose his place. During the independent reading time, he will complete 100% of his work with 100% accuracy.

Classroom Procedure I

It was decided that before Kevin could work independently,

he should be able to keep up with the teacher during small group situations.

During reading, Kevin worked with the teacher and one other student. They worked for approximately one-third of the period on flash cards, one-third on oral reading and one-third of the time in a workbook. The math group consisted of five students. The students worked for half the period on a group directed activity and half the period on an independent written follow up.

Measurement procedure. During both the reading and math periods, the teacher tallied the number of times she had to remind Kevin to emit an oral or written response. During reading the teacher also tallied the number of written reading responses. In math, percent correct and rate per minute were recorded.

Baseline. A multiple baseline design was used. Baseline during the reading period ran for eight days. Baseline during the math period ran for 24 days. In both the reading and math periods, the teacher recorded the number of times she needed to prompt Kevin to continue working.

Contingent praise for verbal and written responses. Beginning with session nine, the teacher began praising Kevin when he made a correct oral or written response or when he was attending to his work during the reading period. On day 25, the teacher began praising Kevin for oral and written responses and attending during math period. The number of prompts, praises, and written responses were tallied for both periods.

RESULTS

Figures 1 and 2 indicate the number of prompts and praises given by the teacher in both the reading and math periods. During baseline, the median number of prompts during the reading period was 14, during the math period, it was 5. When praise was added to the reading period, the median number of prompts decreased to 51. When added to the math period, prompts decreased to a median of .5. The median number of praises during reading was 21, during math, 18.

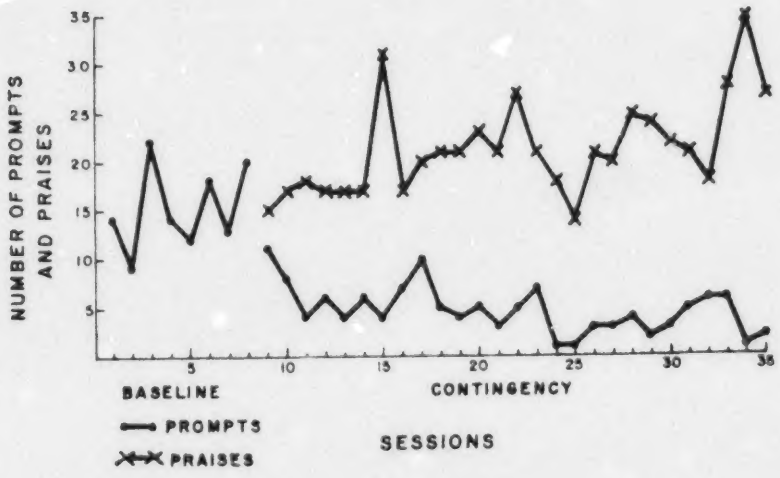

Fig. 1. Teacher prompts and praises during reading.

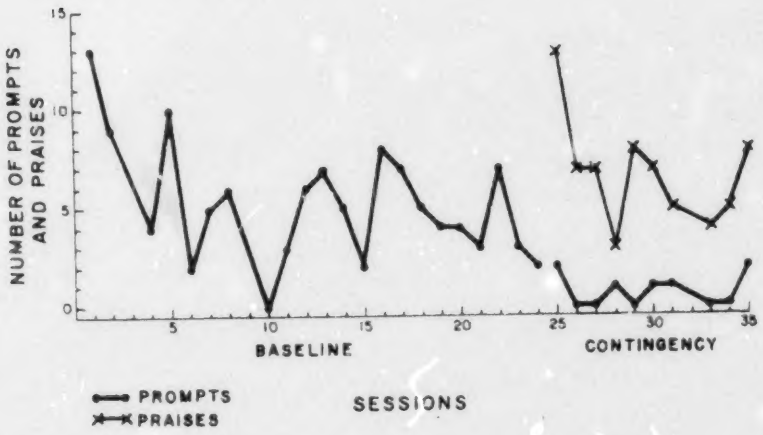

Fig. 2. Teacher prompts and praises during math.

Figure 3 shows the increase in written responses during the reading period. During baseline, the median number of written reading responses was 7. When contingent praise was instituted, the median rose to 18.

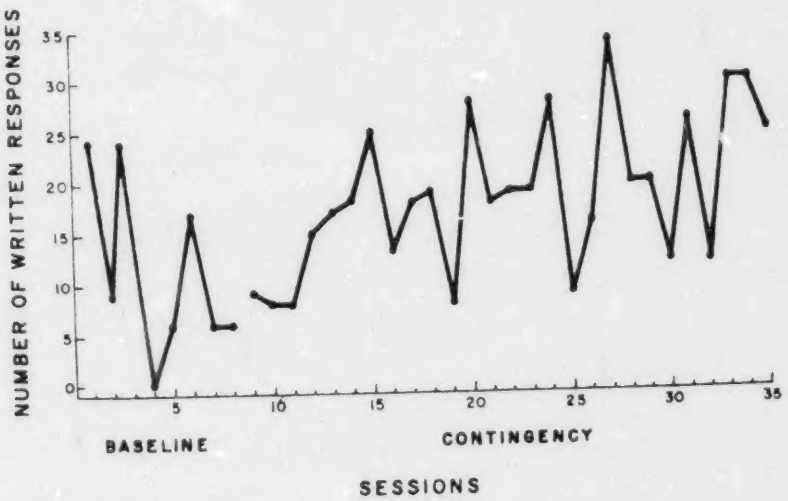

Fig. 3. Daily written reading responses.

During the math period, both rate and accuracy of math problems were measured. Figure 4 shows that in baseline the median math rate was 3.6 problems per minute. Upon the introduction of praise in the math period, the median rate rose to 6.2 problems per minute.

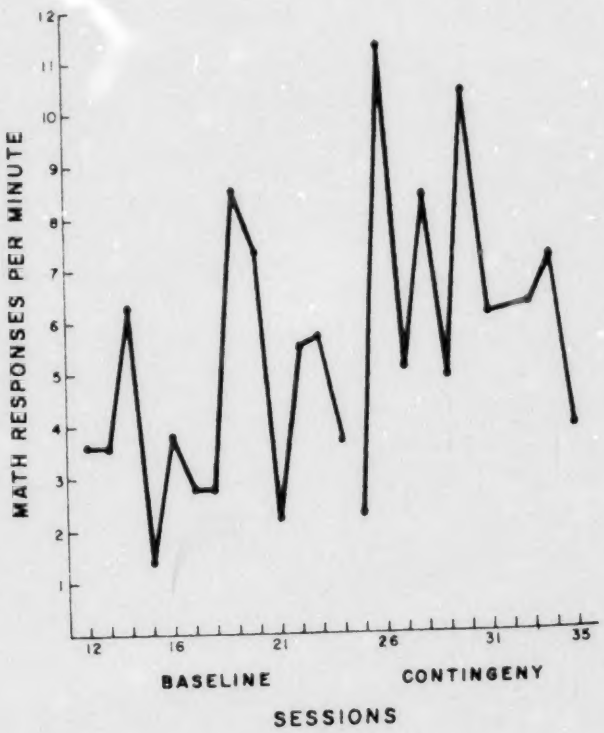

Fig. 4. Daily rate of math responses per minute.

Figure 5 indicates that during the baseline, the median percentage of correct math problems was 86% and rose to 100% when praise was contingent on correct responses.

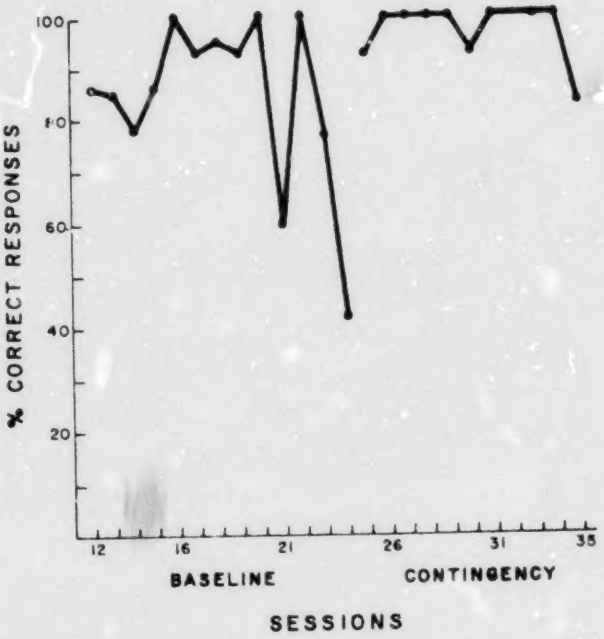

Fig. 5. Percent of problems correct in math.

Classroom Procedure II

Since Kevin was responding during the small group sessions, the teacher felt it now necessary to help him work independently.

Measurement procedures. During a morning independent reading work period, a tally was made of the number of problems completed in a Sullivan Workbook.

Instructional materials. The Sullivan Programmed Reading Series was used. Kevin worked in books 4 and 5. He also read the Sullivan Storybooks, books 1-14A. The Sullivan Programmed Readers were dismantled and the answer columns removed. The pages were presented individually to Kevin in a brightly decorated envolope. At first, he was presented with only one page at a time. This was increased to three pages by the end of the study.

Baseline. During baseline, Kevin was presented with his work envelope each morning. The teacher recorded the number of items he completed daily. She also recorded the time per page.

Library Book Consequence. It was observed that Kevin enjoyed reading. He would collect library books in his desk and read them when he should have been attending to other material. During this period, all books were removed from his desk. Kevin was told that when his work was all complete and all correct he could go to a corner of the room where he would find a surprise just for him. The teacher prepared a decorated box. Each day she placed one of the Sullivan Storybooks in it. Kevin read all 35 books in the series during this study.

Kevin was instructed to raise his hand when he had completed his workbook page(s). The teacher immediately corrected the page(s). If they were 100% complete and correct, he was allowed to get his surprise. If he did not meet the criteria, he had to return to his seat and correct his work. When he did meet the criteria, he was allowed to get his surprise.

RESULTS

Figure 6 indicates the number of items completed during the independent morning reading period. During baseline, the median was 22 items. When the library book was added as a consequence, the median rose to 28 items. The average time per page during baseline was six minutes, during contingency the average time per page was 3.5 minutes.

All papers were kept by the teacher and periodically checked by an observer with reliability at 100%.

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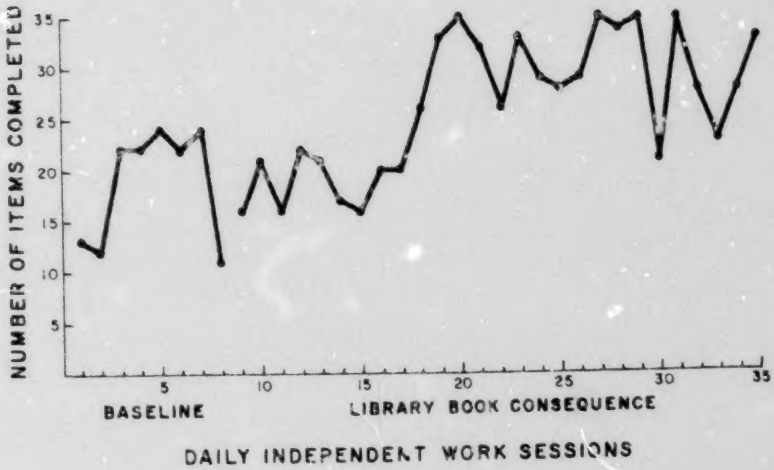

Fig. 6. Items completed independently.

DISCUSSION

It was noted by the teacher that many concurrent changes occurred during this study. Kevin's voice became audible to all in his group. He volunteered information during reading and math class and he began to relate orally the stories he was reading to experiences he had. The teacher also reported that Kevin had not been "lost" in some time.

Sue Harvey - Charlotte Central School

PROCEDURES

Referral problem

Alan was referred by his third-grade teacher because he did not complete his written mathematics assignments.

Pupil

Alan was a nine-year-old boy. Although he had been placed in a group of "very slow" math students, he was inattentive and did not finish assigned work. However, the work that he did complete was done accurately. His mother shared his teacher's concern with his lack of interest in math and expressed a desire to help.

Description of classroom

Alan's math group consisted of 15 children. The group met daily for 30 minutes. The first 15 minutes of the period was spent working with the teacher and the remainder of the time the students worked on written assignments. During this independent worktime, the teacher was available to answer questions.

Instructional objective

During the 15 minutes of independent worktime, Alan should complete all of the assigned written math work with at least 80% accuracy.

Instructional materials

Level 3 of the Greater Cleveland Mathematics Program, Science Research Associates, 1968, was the basic text used, with teacher-prepared supplementary worksheets. The work during this time

consisted of multiplication of one and two digit numbers and subtraction review. Students were typically asked to complete 30-40 written responses during their independent work time, this number was reduced for more difficult work. Charts of the multiplication tables and flash cards were available for the children's use.

Measurement procedures

Alan's teacher kept a daily cumulative record of his completed math papers.

Classroom procedures

1) Baseline - A baseline of completed math assignments was recorded for Alan during five math periods.

2) Contingent Free Time on Playground - During a parent conference, the teacher discovered that Alan especially liked to come to school a few minutes early for extra playground time in the morning. Alan's mother agreed to make this free time contingent on Alan's completion of the previous day's math assignment. If Alan completed his math, the teacher gave him a card with a star on it. This indicated to his mother that Alan had earned extra playground time the next day and also provided her with a daily report of Alan's progress in math. A reliability check of Alan's completed math papers during this time resulted in 100% agreement with the teacher.

RESULTS

Figure 1 shows the cumulative number of mathematics papers

that Alan completed during the course of this study. During the baseline period, no arithmetic papers were completed for five days in a row. When the contingent free time was introduced, after the first two days of this contingency, Alan completed his math paper every day.

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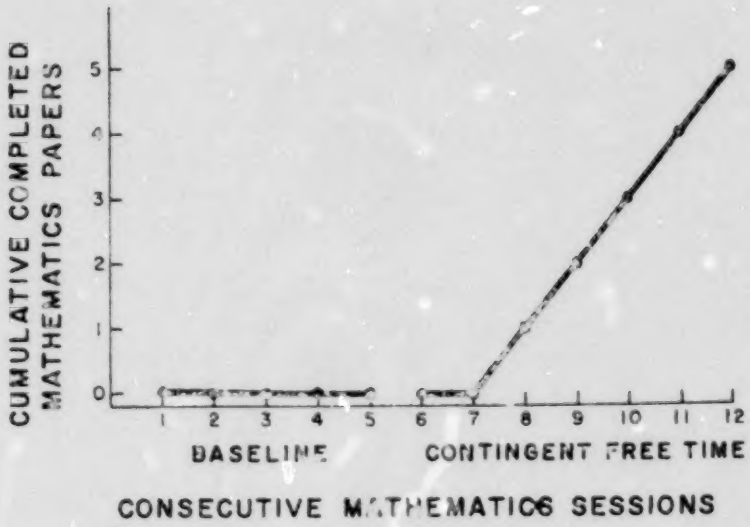

Fig. 1. A cumulative record of completed daily mathematics papers.

Judith Duval - Shelburne Village School

PROCEDURES

Referral problem

In spite of frequent reminders by the teacher, many children in this third-level classroom were not ready to begin work when the final morning and afternoon bells rang. Some children would be out of their seats, others sharpening their pencils. There would often be coats on the floor and boots not in order, obstructing traffic in the busy classroom.

Pupils and description of classroom

This group consisted of 11 girls and 13 boys who averaged nine years of age. The classroom was a large area which included another homeroom class of approximately the same size. The groups were divided by a large rack for coats and boots. Children from these two groups and a third group across the hall were taught by a team of three teachers, assisted by a teacher aide. Although each child was assigned a homeroom teacher, the children were re-grouped throughout the day for instruction in basic skill areas. The children were allowed ten minutes in the morning and five minutes in the afternoon to get "ready to work" before the final bells.

Instructional objective

By the time the final bells ring to begin the morning and afternoon school sessions, all 24 children will be in their seats. All coats will be hung up and boots will be in order. In the morning, each child will have a sharpened pencil at his desk.

Measurement and reliability procedures

At the morning and afternoon bells, a tally was made of:

1) Children not in seat, facing desk with feet on floor.

2) Coats not hung up.

3) Boots not in order.

4) Pencils not sharpened (a.m. only).

During this study, weekly reliability checks were made with a second observer tallying the four measured behaviors. Percentage of agreement ranged from 79% to 100% with a mean agreement of 95%.

Classroom procedures

Baseline A baseline frequency tally of the four behaviors was recorded. The teacher began each morning by reading from a favorite book for a few minutes.

Condition I

Contingent Story - In seat, pencils sharpened

During this condition, the children were told that the teacher would divide her reading time and would read to them after the morning and afternoon bells only if they were all in their seats and, in the morning, they had sharpened pencils.

Condition II

Contingent Story - In seat, pencils sharpened, coats and boots in place

During this condition, two more criteria were added to determine whether the teacher would read the story. All coats would be hung up and all boots in order.

RESULTS

Figures 1 and 2 show the extent to which out-of-seat behavior and pencils not sharpened decreased when the story was made contingent on the children being in their seats in the morning and afternoon, and having their pencils sharpened in the morning. During baseline conditions, the mean number of out-of-seat responses during the a.m. was 7 and during the p.m. the mean number of out-of-seat responses was 12. During the contingent story time, both a.m. and p.m. out-of-seat behavior was approximately 0. The number of pencils not sharpened was also reduced to approximately 0.

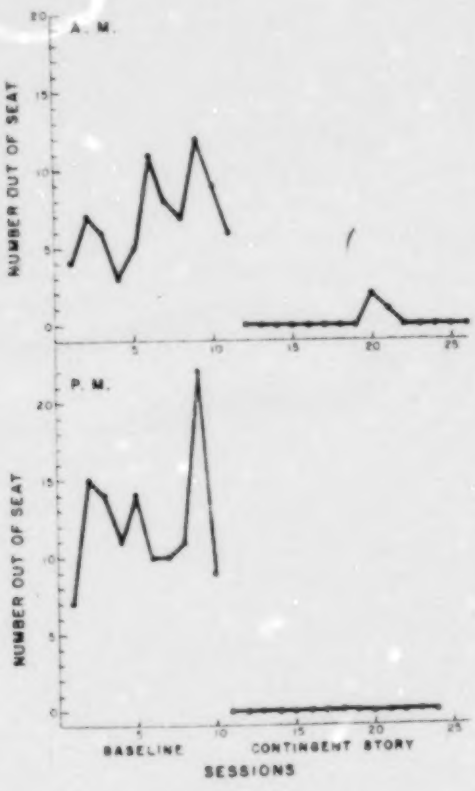

Fig. 1. Frequency of out-of-seat behavior during the morning and afternoon periods.

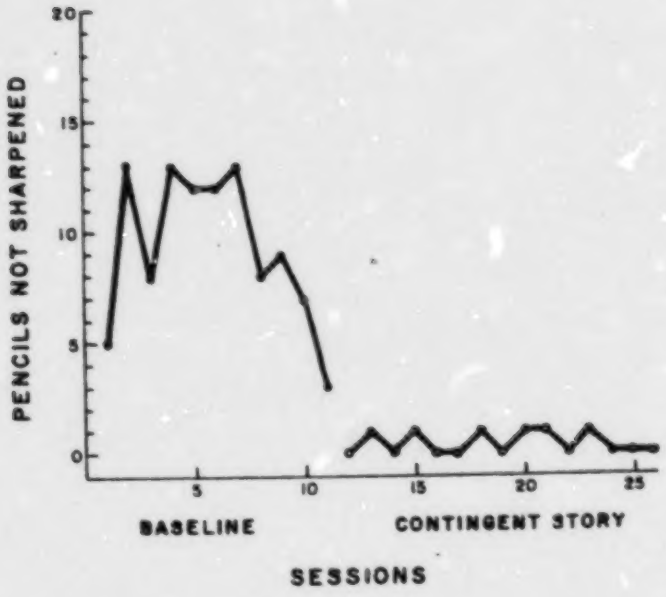

Fig. 2. Frequency of pencils not sharpened during the morning.

Figures 3 and 4 show that when the story was also made contingent on hanging up coats in the morning and afternoon and having boots in order in the morning and afternoon, a similar reduction of these inappropriate behaviors occured. On figures 1, 3, and 4 there are differences in the number of data points between the a.m. and p.m. periods. This is due to the fact that there were times when school was not in session during the afternoon periods because of field trips, etc.

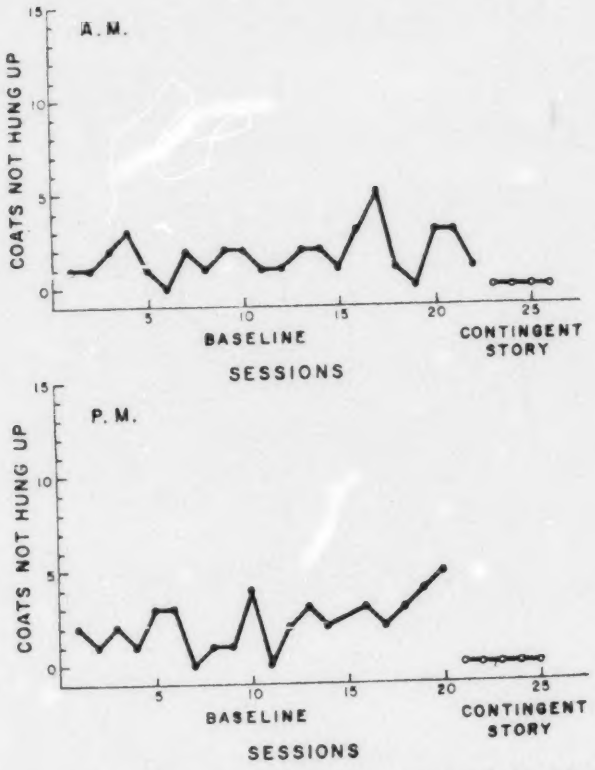

Fig. 3. Number of coats not hung up during the morning and afternoon periods.

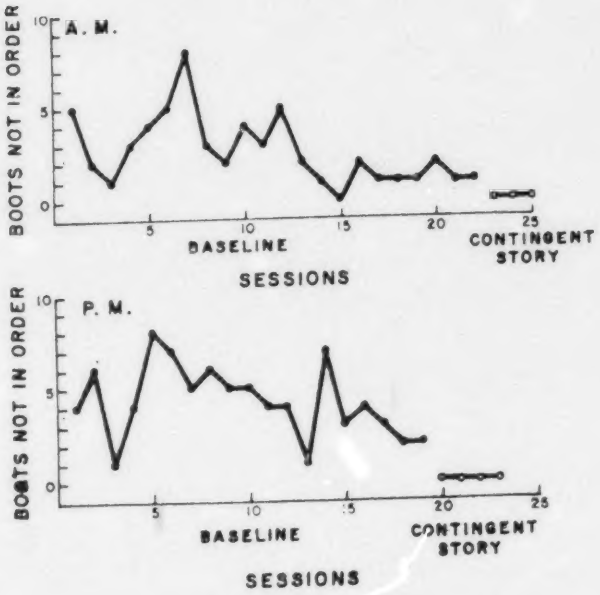

Fig. 4. Number of boots not in order during the morning and afternoon periods.

Catherine Pillsbury - Shelburne Village School

PROCEDURES

Referral problem

Amanda was referred by her first-level teacher because she did not complete any of her assigned independent written work.

Pupil

Amanda was a six-year-old girl in a learning disabilities classroom. She wore glasses and had had eye surgery to straighten her eyes. She did not complete any of her assigned papers. Any work she did do did not meet the criteria set by her teacher.

Description of classroom

Amanda was one of 34 children in a first-level learning disabilities class under the direction of two teachers, a student teacher and a part-time aide. The classroom area consisted of two large rooms with a connecting door and a hallway where the teachers worked with the children in small groups. One room was used as a large group activity room, the other was divided into smaller areas where the children worked independently or in small groups.

Instructional objective

All independent work will be 100% complete and 100% correct.

Instructional materials

The teacher used coloring pages, teacher-made writing pages, and worksheets from the Frostig Perceptual Program.

Measurement procedures

Percent of work correct was measured as follows:

Coloring. All coloring was to be within the lines with no white spaces showing. Each area was counted as one response.

Writing activities. The student had to trace over the model given staying on the model lines. The student had to copy the model with all lines falling within the lines of the plastic overlay model.

Visual-Motor work. All responses had to exactly match the model given.

All papers were saved and periodically checked for reliability of grading by an independent observer.

Classroom procedures

Baseline. Percent work correct was measured at the 9:00 - 9:30 a.m. and the 1:00 - 2:00 p.m. independent work periods.

Contingency 1. A conference was held with Amanda's mother and it was decided that ten minutes of her mother's free time each evening would be contingent on Amanda's progress in school that day. All papers would be corrected immediately by the teacher and the percent correct recorded. If Amanda received a better score than the previous day, she received a card with a smiling face which said, "I WAS A GOOD WORKER TODAY." Her mother provided her with a bulletin board on which to tack these cards.

The 1:00 - 2:00 p.m. independent work period was measured and contingent cards were given for work produced at this time only. The 9:00 a.m. work was measured, but contingent cards were not given at this time.

Contingency 2. After session 27, a conference was held with Amanda. She expressed a desire to take home her word cards each evening to work with her mother. It was decided that if Amanda got 80% of her work correct she could take her word cards home. Word cards to take home were contingent on percent correct during the 1:00 session only, but measures of the 9:00 o'clock work were still recorded.

RESULTS

Figure 1 shows the extent to which the home consequence effected Amanda's incorrect responses of coloring and copying letters.

Figure 2 shows percent of correct responses on Frostig papers during the morning work period when there were no contingent consequences applied for accuracy. During the 1:00 p.m. session, the range of accuracy during baseline conditions was from 0 to 15% with a median of 2%. When consequences were introduced contingent upon accurate responses, the range at the 1:00 p.m. period was from 24% to 88% with a median of 60%. When a second contingency was introduced, the range of accuracy for the 1:00 p.m. session was from 81-91% with a median of 95%.

Figure 2 indicates the low rate of accuracy on the Frostig papers during baseline conditions, but when consequences were introduced for the 1:00 p.m. sessions, not for the 9:00 a.m. sessions, the range of accuracy was from 0-100% with a median of 75%. When contingency 2 was introduced for the 1:00 p.m. session, a corresponding

increase in accuracy occurred during the 9:00 a.m. session. The differential number of data points from the a.m. and the p.m. sessions are a function of the fact that the Frostig activities did not occur every day at 9:00 p.m. There were days in which the children engaged in other activities and therefore, no data points could be recorded for these days.

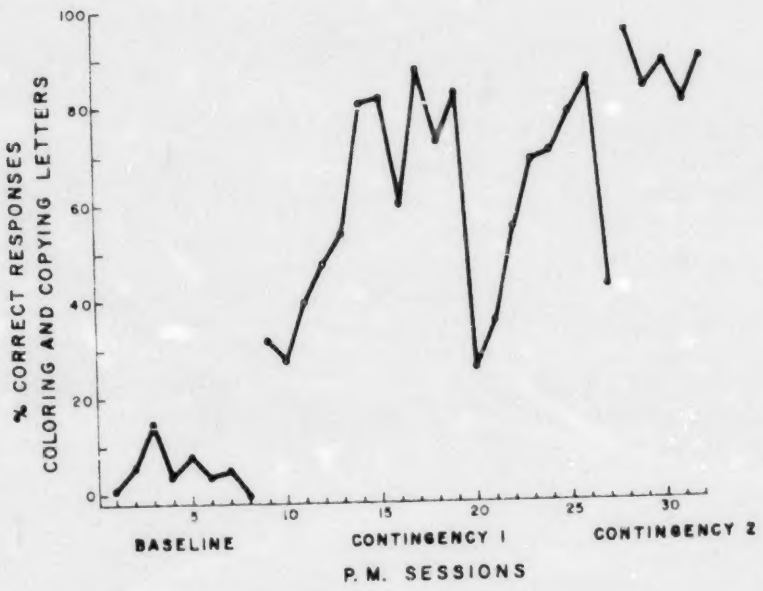

Fig. 1. Daily percentage correct responses for coloring and copying letters.

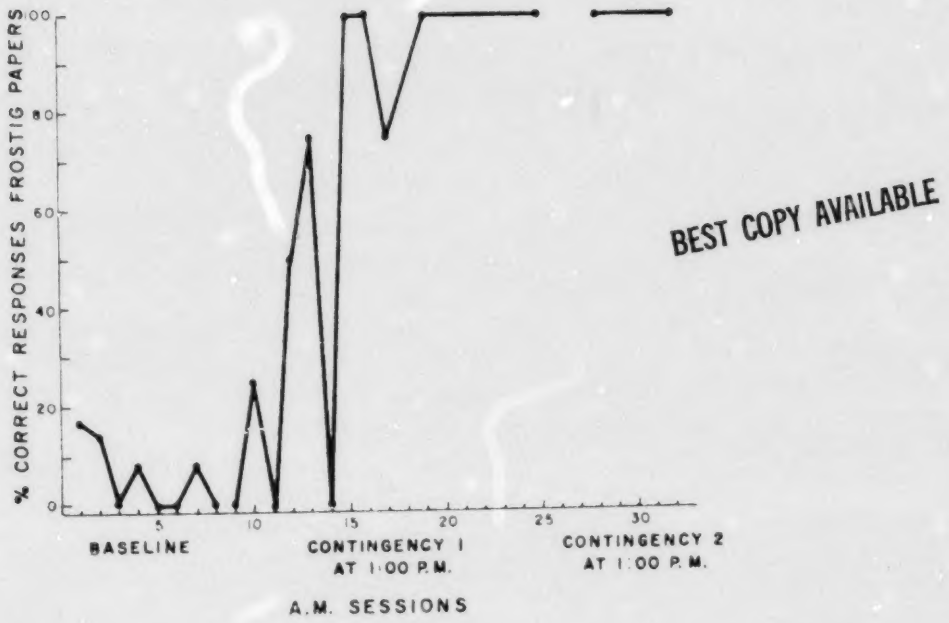

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Fig. 2. Daily percentage correct responses on Frostig materials.

DISCUSSION

It would appear from this study that the application of consequences for improved accuracy during a particular period of the child's day also resulted in improved accuracy for another period of the child's day, even though Amanda received no programmed consequences for accuracy during this period. It is difficult to assess the cause of the improvement during the period of time the consequences were not applied. It could be that the attention Amanda was receiving for accurate work during the 1:00 period carried over in other areas, but it also could be due to the fact that the teacher changed her manner of responding to Amanda as a result of the child's improvement during the 1:00 period.

Ruth Hesslink - Hinesburg Central School
Florence Horsford - Shelburne Village School
Judith Duval - Shelburne Village School
Elizabeth Powell - Williston Central School
Marion Smail - Williston Central School

PROCEDURES

Referral problem

All of the teachers who took part in this study expressed an interest in finding ways to increase their student's rate and accuracy in computing math facts. They were also interested in a group procedure which could provide for individual differences in their students.

Description of classrooms

Classes 1, 2, and 3 were heterogeneously grouped self-contained classrooms at the second primary level. Classes 4 and 5 were third-level primary groups. Class 4 was a self-contained classroom with students who had measured deficits in mathematics skills. Class 5 was a group of "average" students from three classrooms who were in a team-teaching situation.

Instructional objective

Given a one-minute timed test and team competition, the students will increase their rate and accuracy in computing arithmetic facts.

Instructional materials

Classes 1, 2, 3, and 4 used a series of 20-item tests which contained addition and subtraction facts from 0-18..

Classes 4 and 5 used a series of 50-item tests which contained multiplication facts 0 through 10.

Class 5 used a second series of 50-item tests of multiplication facts 3 through 12, omitting the 0, 1 and 2 facts.

(The addition and subtraction tests were developed in the Consulting Teacher Program by Martha Knight and Phyllis Paolucci, Special Education Program College of Education, University of Vermont.)

Classroom procedures

A - Timed Tests - During the timed test condition, one minute was allowed to complete the tests. Students were praised for improving their scores from the previous day.

B - Timed Tests and Team Competition - As in the previous condition, one minute was allowed to complete the tests. Each class was divided into 4 teams which contained an equal distribution of children who scored high on the tests. A child could earn a point for his team in one of two ways:

1) By scoring at least one more correct response than he scored the previous day, or
2) by maintaining a perfect score if he had completed all responses correctly the previous day.

In order to be counted as a correct response, an answer had to be accurate and legible.

A variety of consequences were used to reward the winning teams for the day:

Classes 1, 2, and 3 - Each day the winning team placed a large star on their team number on a wall chart.

Class 4 - The winning team members were "it" in a classroom game, "7-Up", at the end of the day.

Class 5 - The winning team members were awarded attractive "winner" badges to wear for the day.

During both conditions, students in all 5 classrooms were provided daily with time for study of the facts being tested. Flash cards containing the math facts were provided.

In each classroom a second observer scored tests and observed the testing situation at least once each week.

RESULTS

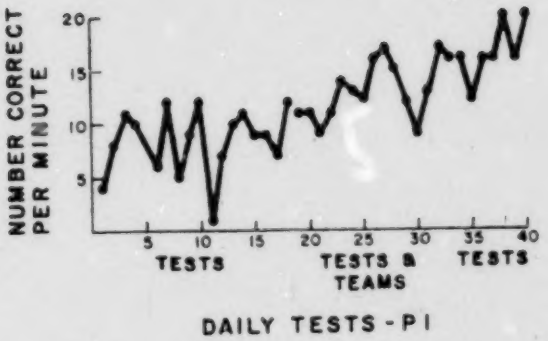
Table I is a summary of the seven studies carried out in these classrooms. Median beginning and final scores are presented for each group. The increase in addition and subtraction facts completed per minute ranged from 8 to 11. The increase in multiplication facts completed per minute ranged from 7 to 10.

TABLE I

CLASS MEDIAN SCORES

	LEVEL	NO. PUPILS	TESTS	# TEST ITEMS	FIRST CLASS MEDIAN	FINAL CLASS MEDIAN
Class 1	2	19	Addition & Subtraction	20	8	17.5
Class 2	2	18	Addition & Subtraction	20	6	17
Class 3	2	20	Addition & Subtraction	20	5	13
Class 4	3	22	Addition & Subtraction	20	10.5	19
			Multiplication Facts 1-10	50	19	27
Class 5	3	33	Multiplication Facts 1-10	50	20	30
			Multiplication Facts 3-12	50	18	25

Figures 1 through 10 show the daily test scores of individual children in each classroom. These children were among those who



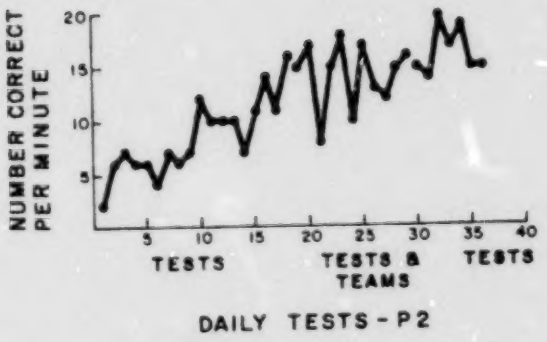
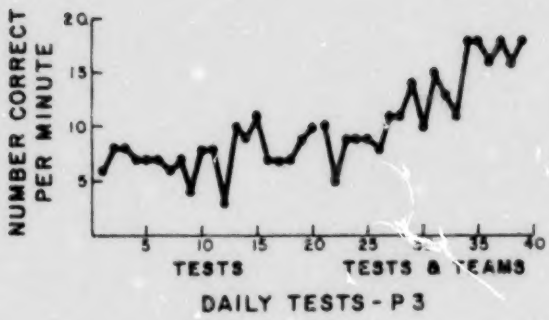


Fig. 1 - Class 1 - Correct addition and subtraction facts.



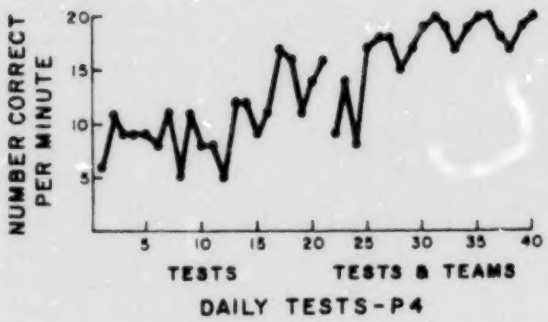
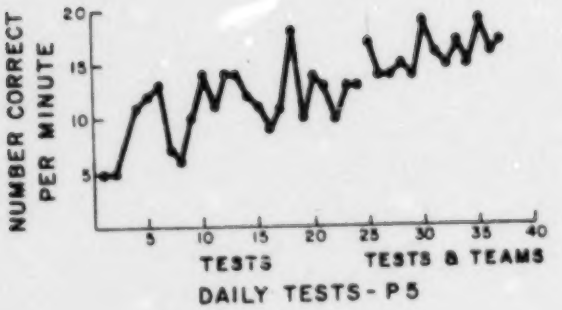


Fig. 2 - Class 2 - Correct addition and subtraction facts.



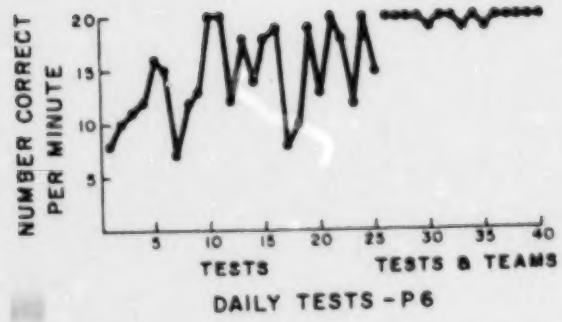


Fig. 3 - Class 3 - Correct addition and subtraction facts.

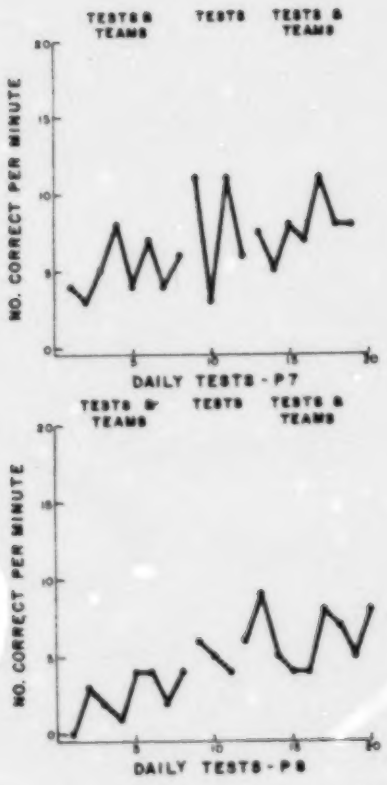


Fig. 4 - Class 4 - Correct addition and subtraction facts.

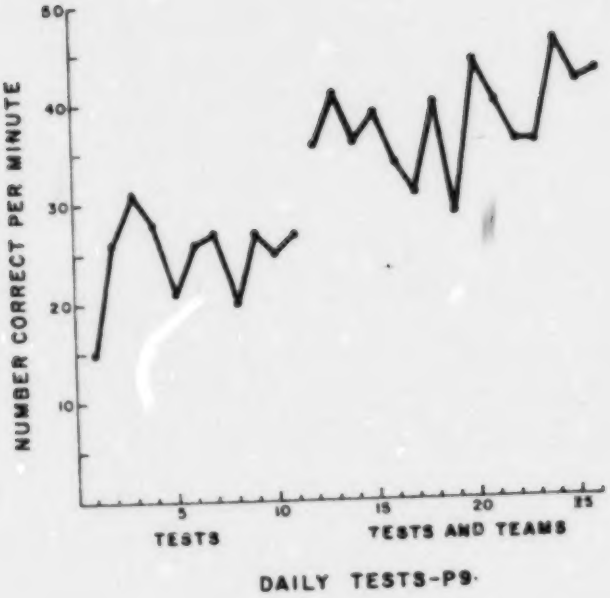


Fig. 5 - Class 4 - Correct multiplication facts 1-10

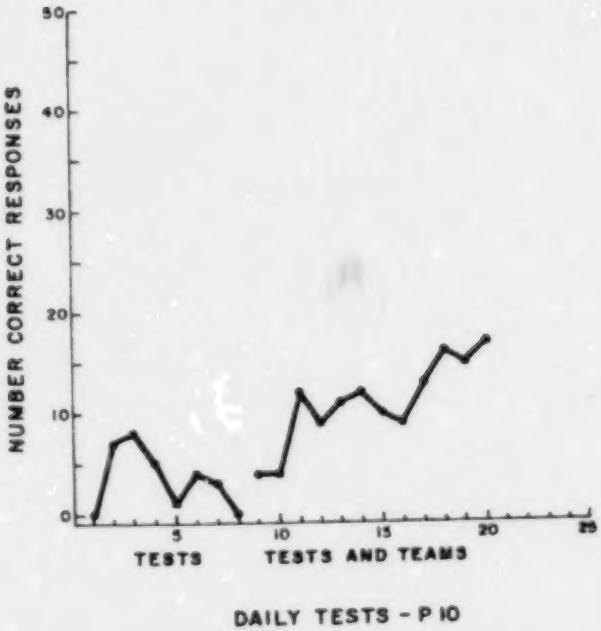


Fig. 6 - Class 4 - Correct multiplication facts 1-10

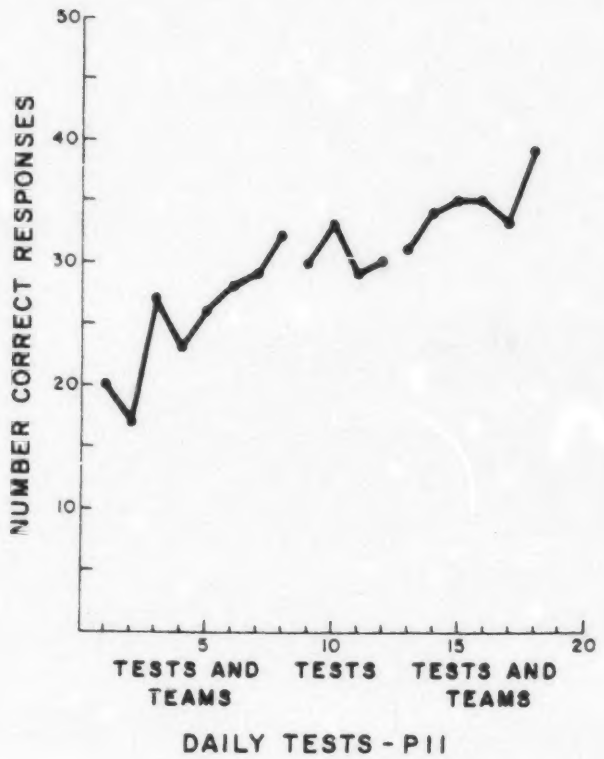


Fig. 7 - Class 5 - Correct multiplication facts 0-10

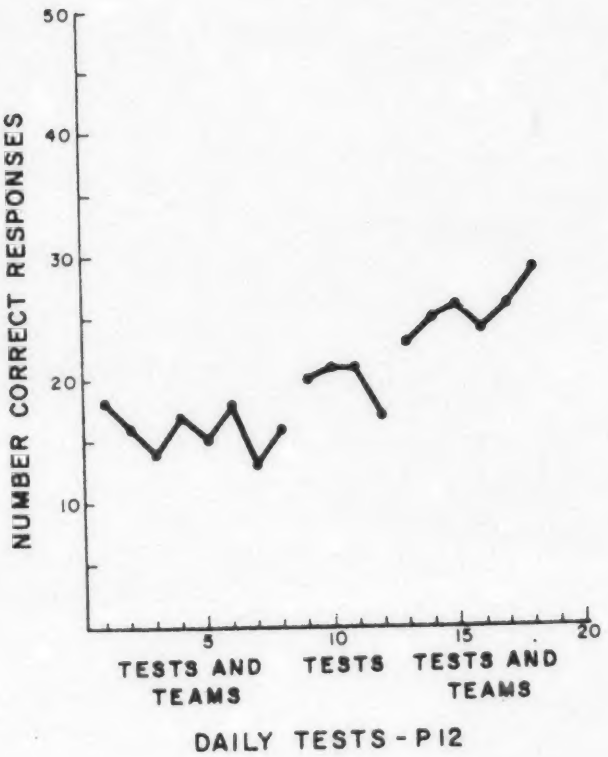


Fig. 8 - Class 5 - Correct multiplication facts 0-10

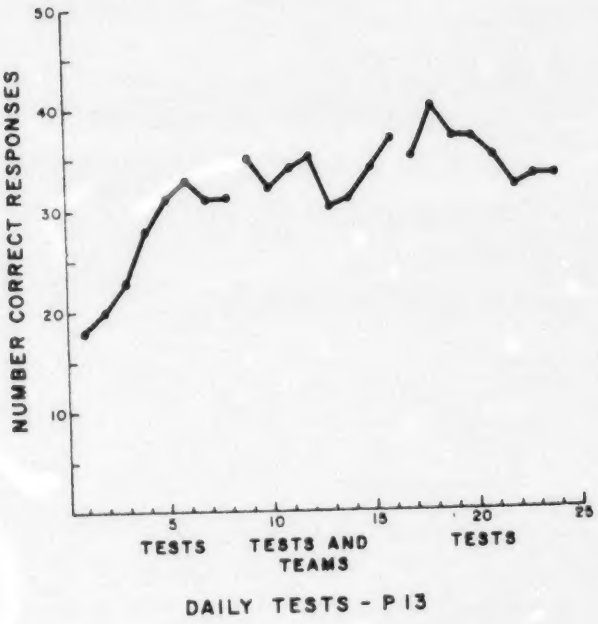


Fig. 9 - Class 5 - Correct multiplication facts 3-12

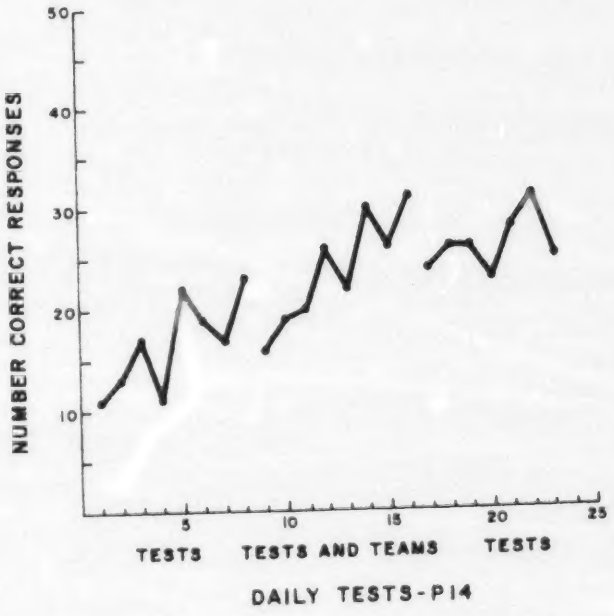


Fig. 10 - Class 5 - Correct multiplication facts 3-12

scored lowest on the first tests. Individual data is available for each of the children who participated in this study, but lack of space prevents their inclusion.

DISCUSSION

Students in all 5 classrooms made steady gains in rate and accuracy on math facts. Interest was high during the team competitions, especially during study time, but no remarkable gains were made by most students during these conditions. It seemed that "racing the clock" in both conditions, and trying to improve individual scores, maintained the continuing progress. However, the teachers felt that the team competition was valuable because it provided an opportunity for even the poorest students to score points for their teams. Typically, these students are the "losers" in competitive situations.

Teachers were pleased with the progress students made. They felt that these procedures met the need for group activities in an individualized math program, while still allowing for individual differences in performance.

Elizabeth Dusablon - Williston Central School

PROCEDURES

Referral problem

Arnold was referred by his teacher because of his disruptive behavior and his reluctance to do assigned work in class.

Pupil

Arnold and his four-year-old sister lived with their mother. His father had recently remarried and lived in a nearby town. Arnold's mother felt that much of his bad behavior was due to their confused home situation and reported that he had been a "problem child" even in kindergarten.

Arnold's misbehavior made a normal classroom situation virtually impossible. Rarely in his seat, he would climb up on the sink, squirt water at nearby classmates, make loud noises, tip desks over, and crawl in the cupboards. When he did perform an assigned task, he demonstrated average or above-average ability, but his work was seldom completed. He was also reading below grade level.

Description of classroom

Twenty students were enrolled in this heterogeneously grouped second-level classroom. Desks were arranged in small groups and the carpeted floor was also used by small groups of children for reading.

Instructional objective

Throughout the school day, Arnold will complete 100% of his assigned work, and will engage in no disruptive behavior.

Classroom Procedure I

It was decided that the most immediate problem was Arnold's disruptive behavior, and that this must be first brought under control before attention could be given to his academic work.

Measurement Procedures. During a half-hour period in the morning, Arnold's teacher recorded his attending behavior at the end of ten three-minute intervals. Attending was defined as in-seat, not talking, face oriented toward work materials or teacher, if the teacher was presenting a lesson.

Baseline

During baseline, Arnold's teacher continued her regular classroom procedures, reprimanding Arnold for his disruptions.

Praise and ignoring

During this phase the teacher was instructed to ignore all inappropriate behavior and to praise Arnold for attending to his work.

Praise and time-out

The teacher continued to praise Arnold for attending to his work. When Arnold engaged in any disruptive behavior, he was escorted across the hall to another classroom where he sat in a chair facing the wall for five minutes. The children in that classroom were instructed to ignore Arnold. At the end of the five minutes, Arnold's teacher returned him to his own classroom.

RESULTS

Figure 1 shows Arnold's attending behavior for all three

conditions of this study. During baseline, Arnold's attending behavior ranged from 0% to 30%, with a mean of 12.5% attending. 100% agreement with a second observer was obtained on session 4.

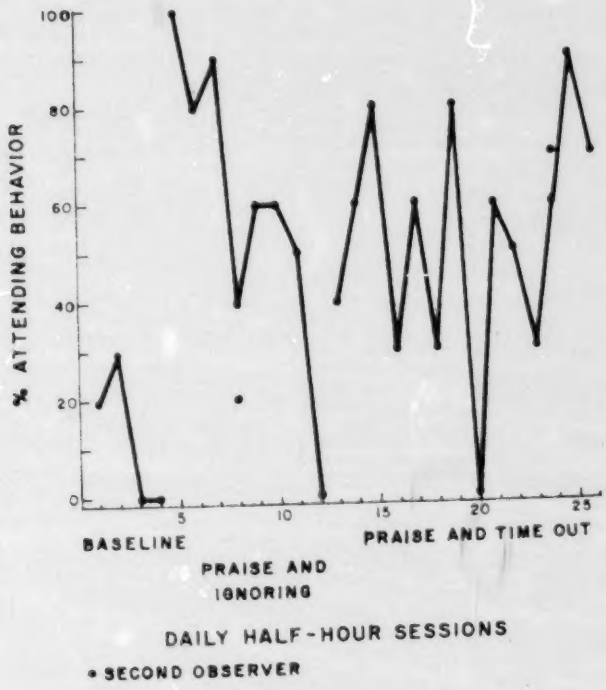


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Fig. 1. Daily percentage of attending behavior for half-hour sessions.

Praise and ignoring

During this phase, Arnold's attending ranged from 0% to 100% with a mean of 60%. Reliability with a second observer on two occasions resulted in 80% and 100% agreement, averaging 90%.

Praise and time-out

Attending during this phase occurred an average of 53% of the time. On session 20, a new girl entered the class and Arnold reacted very negatively, teasing her, calling her name, and

looking her way. This was the day when 0% attending occurred.

Classroom Procedure II

Since Arnold's disruptive social behavior had been diminished, it was now necessary to begin applying consequences to his academic behavior. His mother expressed a desire to help, but was not optomistic about the outcome.

Measurement Procedure. Each day the teacher recorded the percentage of written work that Arnold completed. A percentage was arrived at by dividing the completed responses by assigned responses and multiplying by 100.

Baseline

During baseline, Arnold's teacher kept a daily record of the percentage of work he completed. She continued the praise and time-out procedures.

Home Consequences I

Arnold's mother was shown the baseline of his academic performance. She mentioned that she planned to buy Arnold a new bicycle and agreed that he might earn this at school. The following point system was devised and agreed to by Arnold, his mother, and his teacher.

1. Each day Arnold could earn a total of 25 points in school:
   10 points for good behavior (1 point for each half-hour):
   10 points for reading assignments completed:
   5 points for math assignments completed.
2. At the end of the school day, Arnold's teacher would give him a card telling his mother how many points he had earned. He could earn all or part of the points each day. (If he

had completed 80% of his reading, 100% of his math, and had behaved appropriately for 8 of the 10 half-hours, he had earned 21 points that day.)

3. At home, Arnold and his mother would record his points on a large bar graph. The graph was divided into several sections, each section accompanied by a picture of a bicycle part. A pedal would cost 50 points· a wheel, 100 points. The total cost of the bicycle was 1,000 points.

During this phase, Arnold's mother was called at least twice each week and praised for her consistency. The teacher discontinued the time-out procedure.

Baseline 2

An accidental reversal condition occurred when Arnold's mother unexpectedly left town and left Arnold with a friend. Although he was still receiving points daily, they were no longer being recorded on the graph at home. During this phase, it was necessary to reinstate the time-out procedure.

Home Consequences II

Arnold's mother returned and the home consequences were reinstated.

Reliability

Throughout this study, a second observer visited Arnold's classroom two or three times a week, observed his classroom behavior, and checked his daily work. Computation of percentage of work completed was checked daily by a second observer.

RESULTS

Baseline

Figure 2 shows that during baseline Arnold's percentage of work completed ranged from 0% to 83% with an average of 42% of work completed.

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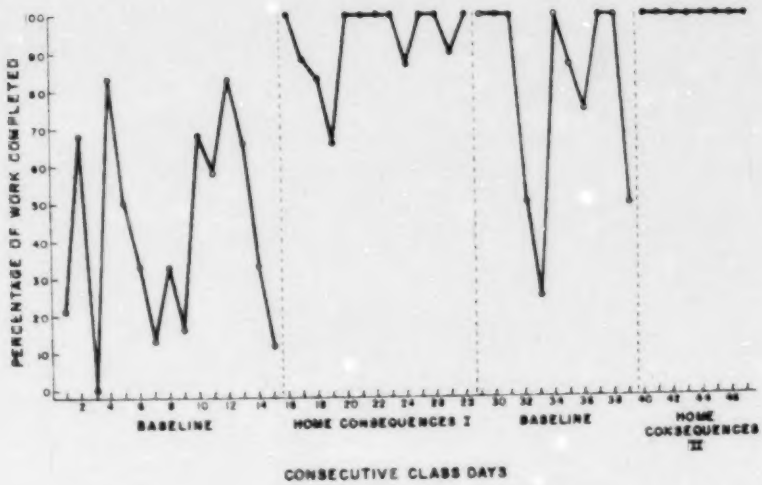

Fig. 2. Daily percentage of assigned work completed by Arnold.

Home Consequences I

During this first home consequation phase, Arnold's percentage of work completed ranged from 66% to 100% with a mean of 93.4%.

Baseline 2

During the time when Arnold's mother was away, Arnold's percentage of work completed ranged from 25% to 100% averaging 81%.

Home Consequences II

When home consequences were reinstated, Arnold's percentage of work completed remained at a constant 100%.

DISCUSSION

At the end of the final two weeks of this study, Arnold's mother left the state with her children. Arnold had earned nearly three-fourths of his bicycle when he left school.

Arnold had begun to accept responsibility for his actions and to develop the self-discipline which is necessary for appropriate school behavior. It was apparent from the daily records of Arnold's behavior that he could function in a normal classroom situation if he was provided with a structured, predictable environment.

Ruth Hesslink - Hinesburg Central School

PROCEDURES

Pupil and classroom

David was a ten-year-old boy in a heterogeneously grouped third-grade classroom. The Weschler Intelligence Scale for Children placed him in the "dull-normal" range. David's teacher reported that he was a well-mannered child, but nervous and withdrawn. He was frequently observed squinting, rolling his eyes, and rubbing his forehead. David had learned to recognize only five words during his five school years. David was referred to the consulting teacher team by his teacher.

Behavioral definition

Reading was defined as a correct oral response to a printed word card within a two-second interval. A word was recorded as "learned" when David responded correctly to that word on two consecutive tests. A test was administered at the beginning of each reading session.

Measurement procedures

Reading sessions were conducted three times each week during the fall and winter, and daily during the spring of the school year. Reading responses were recorded directly on the word cards: a plus (+) indicating a correct response and a zero (0) indicating an incorrect response. When David responded correctly to a word card on two consecutive tests, the word was recorded as "learned" and was replaced by the next new word in the sequence. An observer simultaneously recorded these responses weekly.

Instructional materials

Words were taken from the Merrill Linguistic Reader and Workbook I and II, 1966 edition. Words from Field Education Publishers, Time Machine Series, 1969 were used to supplement the basal words.

Baseline procedure

At the beginning of the reading session, David was given two seconds to respond to each of the ten word cards. This was a test, and responses were recorded as correct or incorrect.

Following the test, the ten word cards were presented again in a "game" sequence. During this "game sequence, if David said the word incorrectly, the teacher said the word and David imitated the teacher's response. The word was then placed directly behind the next word to be presented. When David said the word correctly, the word card was removed from the pack. This sequence was repeated until David had said each word independently.

When David had "learned" all the words for a story, he was given the story to read and the corresponding worksheets. A retention test was given five sessions after the word was "learned".

Contingency procedure

During contingency, the procedures were the same as for baseline except for every Merrill (first-grade level) word "learned , he was given a word card in the Time Machine Series (third-grade level.) David's parents used the game procedure at home to "teach" him the third-grade level words.

RESULTS

Figure 1 indicates that during baseline, David "learned" 34 words in 19 five-minute sessions. The median was two words per session. During contingency he "learned" 118 words in 26 sessions, the median was 3.5 words per session for sessions 20-36. On session 35, the number of words presented was doubled. The median for words learned for sessions 37-45 was 8 words per session. Thus, he learned a total of 152 Merrill words during 45 sessions (four hours.)

David's worksheets were consistently 100% correct.

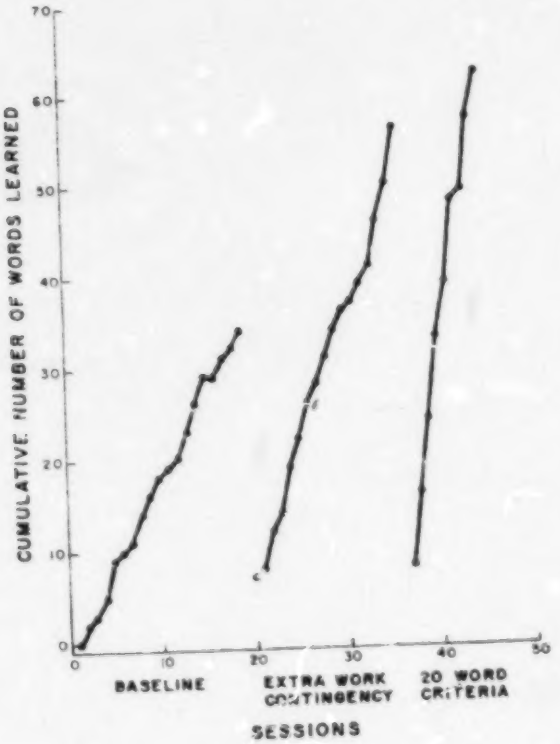

Fig. 1 Cumulative graph of words learned.

Figure 2 indicates the percentage of words retained after five sessions. During baseline, the median for the percentage of words retained was 66%, and during contingency, it was 100%.

Reliability measures ranged from 96% to 100% agreement.

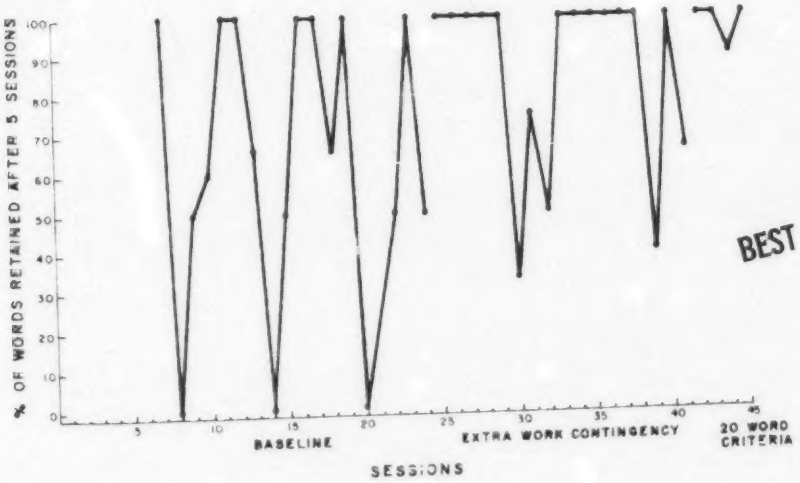

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Fig. 2. Retention of words learned.

DISCUSSION

Soon after the study began, David's nervous tics disappeared. He now interacts with his peers and was selected as chairman of class science and social studies projects. He volunteers to get reference books on these projects from the library. His teacher states that David now can successfully read and comprehend fourth and fifth-grade history and science books. David also goes to the kindergarten class occasionally to conduct a story hour.

David's creative writing has also improved. Before the study began, he did not attempt writing at all. His first attempt was, "The man is on the mat. Is the man fat?"

An example of his latest writing is, "You need fertilizer for a field to make it into a garden and sun and rain and fresh air and compost. If you have a animal, maybe his waste is good to have for the garden. You need good soil and no rocks."

Appendix A

WORKSHOP PARTICIPANTS

Number of Children Served	Teacher, Aide or Parent	School	Level or Grade	Measured Behavior	Teaching/Learning Procedures
19	Horsford Village	Shelburne	2	Accuracy on addition & subtraction facts	Timed tests & team competition.
1	Oakes	Shelburne Village	3	Attending to assigned task.	Praise and feedback on daily performance.
1	Dusablon	Williston	?	Attending to assigned task.	Teacher attention for appropriate behavior, time-out for disruptive behavior.
18	Powell	Williston	2	Accuracy on addition & subtraction facts.	Timed tests and team competition.
20	Smail	Williston	2	Accuracy on addition & subtraction facts.	Timed tests and team competition.
		CONSULTEES			
1	Wadsworth	Charlotte	4	Socially acceptable behavior during 12 half-hour periods per day.	Note home for "perfect" days.
1	Wadsworth	Charlotte	4	Accurate responses to reading comprehension questions.	Card home for 80% correct.
1	Driscoll	Hinesburg	3	Accuracy on oral reading.	Measurement of oral reading.

22	Hesslink	Hinesburg	3	Accuracy on addition, subtraction, & multiplication facts.	Timed tests & team competition.
1	Hesslink	Hinesburg	3	Reading acquisition	Systematic prompting procedure with praise.
1	Perry	Hinesburg	2	Work complete & attending.	Star chart.
1	Matthews	Shelburne	3	Reading responses.	Programmed material.
1	Zickerman-Pordeau	Shelburne	K	Voluntary verbal behavior	Praising appropriate behavior. Ignoring inappropriate behavior.
1	Halstead	Williston	3	Attending	Praise and home consequation.
1	Shaw, Shea	Williston	3	Attending	Praise and ignoring.
		READING RESEARCH			
2	Coburn	Williston	Aide	Reading responses	Word position.
1	Duval	Shelburne	3	Reading responses	Word position, learned word box.
3	Pizziconi	Williston	Aide	Reading responses	Word position, learned word box, contingent books.

Appendix A

COURSE ED. 295-296

No. of children Served	Teacher, Aide, or Parent	School	Grade or Level	Measured Behavior	Teaching/Learning Procedure
1	Crocitto	Charlotte	Reading 8	Number of sentences correctly read orally	Contingent use of typewriter.
1	Crocitto	Charlotte	Reading 3	Original written responses to picture stimuli	Contingent decorative flashcards.
1	Dominquez	Charlotte	1	Completed papers	'First in lunch line' ticket contingent on completed papers.
25	Harvey	Charlotte	3	Spelling accuracy on written tests	Pupil specified classroom privileges contingent on perfect spelling test scores.
1	Harvey	Charlotte	3	Completed math papers	Extra playground time for completed papers.
1	Harvey	Charlotte	3	Aggression	Extinction.
25	Harvey	Charlotte	3	Teacher attention to individuals during class discussion.	Charting of attention to individual children.
7	Bennett	Shelburne	1	Learning letter names	Contingent "bug moving", cards, sound boxes & teacher praise

1	Bennett	Shelburne	1	Oral and written responses in math and reading.	Teacher praise; contingent books.
1	Duval	Shelburne	3	Completed work.	Contingent time alone with the teacher.
33	Duval	Shelburne	3	Accuracy on addition subtraction and multiplication facts.	Timed tests and team competition.
24	Duval	Shelburne	3	Coats, boots in order, pencils sharpened; students in seat.	Contingent story reading.
1	MacIntyre	Shelburne	2	Attending.	Praise and ignoring.
24	Murray	Shelburne	1	In-seat behavior.	Contingent tokens.
1	Pillsbury	Shelburne	1	Completed work.	Home consequation.
1	Pillsbury	Shelburne	Home	Acquisition of multiplication facts.	Bicycle parts contingent on learned multiplication facts.
1	Dusablon	Williston	2	Attending and work complete.	Teacher praise and home consequation.
1	Dusablon	Williston	2	Work complete during math.	Special activity time with teacher aide.

1	Lloyd	Williston	6	Talk-outs	Contingent free time for whole class.
10	Lloyd	Williston	8	Work completed.	Immediate reinforcement.
1	Moon	Williston	2	Attending.	Teacher praise.
24	Solomon	Williston	4,5	Bringing work material to class.	Point system.
24	Solomon	Williston	4,5	Individualized math.	Point system.
1	Usle	Williston	1	Eating lunch.	Contingent lunch time with teacher.
1	Pizziconi	Williston	2	Reading responses.	Learned-word box.